IN THE CLAIMS

Cancel Claims 1 and 3 - 22 without prejudice, amend Claims 23, 24, and 27, and add new Claims 36 - 60 so that the claims are as follows:

1 - 22. (Canceled)

23. (Currently amended) A method comprising: ~~The method of Claim 8 wherein:~~

forming a cobalt layer over a ~~the~~ body which comprises a silicon-containing ~~an~~ erasable programmable read-only memory region; ~~and~~

forming a titanium layer over the cobalt layer by ionized physical vapor deposition;

reacting cobalt of the cobalt layer with silicon of ~~the cobalt silicide layer is formed to contact~~ a doped silicon section of the erasable programmable read-only memory region to form a cobalt silicide layer; and

substantially removing the titanium layer and any unreacted cobalt of the cobalt layer.

24. (Currently amended) A method comprising: ~~The method of Claim 8 wherein:~~

forming a cobalt layer over a ~~the~~ body which comprises an erasable programmable read-only memory region that includes (i) a first section comprising doped monocrystalline silicon and (ii) a second section situated on the first section, an opening extending through the second section down to the first section; ~~and~~

forming a titanium layer over the cobalt layer by ionized physical vapor deposition;

reacting cobalt of the cobalt layer with silicon of the first section to form a ~~the~~ cobalt silicide layer that contacts ~~is formed to contact~~ remaining material of the first section at the bottom of the opening; and

substantially removing the titanium layer and any unreacted cobalt of the cobalt layer.

25. (Previously presented) The method of Claim 24 wherein the first section is a surface layer of the erasable programmable read-only memory region.

26. (Previously presented) The method of Claim 23 wherein the doped silicon section comprises doped monocrystalline silicon.

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27. (Currently amended) A method comprising: ~~The method of Claim 8 wherein:~~

forming a cobalt layer over a ~~the~~ body which comprises (a) a doped monocrystalline silicon substrate, (b) a floating gate overlying the substrate, (c) a control gate overlying the floating gate, and (d) electrically insulating material which surrounds the floating gate and separates the floating and control gates from each other and from the substrate; ~~and~~

forming a titanium layer over the cobalt layer by ionized physical vapor deposition;

reacting cobalt of the cobalt layer with silicon of the substrate to form a ~~the~~ cobalt silicide layer that contacts ~~is formed to contact~~ remaining material of the substrate; and

substantially removing the titanium layer and any unreacted cobalt of the cobalt layer.

28. (Previously presented) The method of Claim 27 wherein:

the substrate comprises a pair of source/drain regions and a body region that (a) separates the source/drain regions from each other and (b) forms a pn junction with each source/drain region, the floating gate extending partially over at least one of the source/drain regions;

the cobalt silicide layer is formed to contact one of the source/drain regions.

29. (Previously presented) The method of Claim 28 wherein a floating-gate transistor of a memory cell of an erasable programmable read-only memory is comprised by the source/drain and body regions and the floating and control gates.

30. (Previously presented) The method of Claim 28 wherein the floating gate extends partially over only one of the source/drain regions.

31. (Previously presented) The method of Claim 28 further including:

forming a further cobalt layer over the other of the source/drain regions;

forming a further titanium layer over the further cobalt layer by ionized physical vapor deposition;

reacting cobalt of the further cobalt layer with silicon of that other of the source/drain regions to form a further cobalt silicide layer; and

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substantially removing the further titanium layer and any unreacted cobalt of the further cobalt layer.

32. (Previously presented) The method of Claim 27 wherein the body includes (a) a select gate overlying the substrate generally lateral to the floating gate and (b) electrically insulating material which separates the select gate from the floating and control gates and from the substrate.

33. (Previously presented) The method of Claim 32 wherein:

the substrate comprises a pair of source/drain regions and a body region that (a) separates the source/drain regions from each other and (b) forms a pn junction with each source/drain region, the floating gate extending partially over one of the source/drain regions, the select gate extending partially over the other of the source/drain regions; and

the cobalt silicide layer is formed to contact one of the source/drain regions.

34. (Previously presented) The method of Claim 33 wherein a floating-gate transistor of a memory cell of an erasable programmable read-only memory is comprised by the source/drain and body regions and the floating, control, and select gates.

35. (Previously presented) The method of Claim 33 further including:

forming a further cobalt layer over the other of the source/drain regions;

forming a further titanium layer over the further cobalt layer by ionized physical vapor deposition;

reacting cobalt of the further cobalt layer with silicon of that other of the source/drain regions to form a further cobalt silicide layer; and

substantially removing the further titanium layer and any unreacted cobalt of the further cobalt layer.

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36. (New) The method of Claim 27 further including, subsequent to the removing act, heating the body and cobalt silicide layer to reduce the resistivity of the cobalt silicide layer.

37. (New) The method of Claim 36 wherein the heating act comprises rapidly thermally annealing the body and cobalt silicide layer.

38. (New) The method of Claim 27 wherein the forming acts are performed in a chamber at below-atmospheric pressure without exposing the body to atmospheric pressure between the forming acts.

39. (New) The method of Claim 27 wherein the titanium layer has a thickness of no more than 7.5 μm.

40. (New) The method of Claim 27 wherein the ionized physical vapor deposition comprises ion sputtering from a titanium target at a throw distance of at least 140 nm to the body.

41. (New) The method of Claim 27 wherein the ionized physical vapor deposition is performed in a chamber with the body situated on a pedestal coupled to a bias source that provides AC current for helping ionize gas to produce gas ions that dislodge titanium from a titanium target in the chamber.

42. (New) The method of Claim 27 wherein the ionized physical vapor deposition is performed in a chamber with the body situated on a pedestal coupled to a bias source that is turned substantially off to reduce resputtering of cobalt of the cobalt layer.

43. (New) The method of Claim 27 wherein:

the body includes a silicon oxide layer extending along the substrate;

the method includes, prior to the forming acts, removing at least part of the silicon oxide layer to substantially expose at least part of the substrate; and

at least part of the cobalt layer is formed along the substrate where it is substantially exposed.

44. (New) The method of Claim 27 wherein:

the body includes a silicon oxide layer situated along the substrate; and

the reacting act includes causing oxygen in the silicon oxide layer to be dissolved by titanium of the titanium layer.

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45. (New) The method of Claim 27 wherein:

the body includes an electrode-containing region situated on the substrate, an opening extending through the electrode-containing region down to the substrate;

the cobalt layer extends at least into the opening down to the substrate; and

the titanium layer extends at least into the opening above material of the cobalt layer at the bottom of the opening.

46. (New) The method of Claim 45 wherein:

the body further includes a silicon oxide layer extending along the substrate at least at the bottom of the opening;

the method includes, prior to the forming acts, removing material of the silicon oxide layer at the bottom of the opening to substantially expose the substrate at the bottom of the opening; and

at least part of the cobalt layer is formed along the substrate at the bottom of the opening.

47. (New) The method of Claim 45 wherein:

the body further includes a silicon oxide layer extending along the substrate at least at the bottom of the opening; and

the reacting act includes causing oxygen of the silicon oxide layer at the bottom of the opening to be dissolved by titanium of the titanium layer.

48. (New) The method of Claim 45 wherein the opening has an aspect ratio of at least 1.3.

49. (New) The method of Claim 45 wherein the opening has an aspect ratio of at least 2.5.

50. (New) The method of Claim 23 further including, subsequent to the removing act, heating the body and cobalt silicide layer to reduce the resistivity of the cobalt silicide layer.

51. (New) The method of Claim 50 wherein the heating act comprises rapidly thermally annealing the body and cobalt silicide layer.

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52. (New) The method of Claim 23 wherein the forming acts are performed in a chamber at below-atmospheric pressure without exposing the body to atmospheric pressure between the forming acts.

53. (New) The method of Claim 23 wherein the titanium layer has a thickness of no more than 7.5 μm.

54. (New The method of Claim 23 wherein the ionized physical vapor deposition is performed in a chamber with the body situated on a pedestal coupled to a bias source that provides AC current for helping ionize gas to produce gas ions that dislodge titanium from a titanium target in the chamber.

55. (New) The method of Claim 23 wherein the ionized physical vapor deposition is performed in a chamber with the body situated on a pedestal coupled to a bias source that is turned substantially off to reduce resputtering of cobalt of the cobalt layer.

56. (New) The method of Claim 23 wherein:

the body includes a silicon oxide layer extending along the doped silicon section;

the method includes, prior to the forming acts, removing at least part of the silicon oxide layer to substantially expose at least part of the doped silicon section; and

at least part of the cobalt layer is formed along the doped silicon section where it is substantially exposed.

57. (New) The method of Claim 23 wherein:

the body includes a silicon oxide layer situated along the doped silicon section; and

the reacting act includes causing oxygen in the silicon oxide layer to be dissolved by titanium of the titanium layer.

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58. (New) The method of Claim 24 wherein the titanium layer is formed to extend at least into the opening above material of the cobalt layer at the bottom of the opening.

59. (New) The method of Claim 58 wherein:

the first section comprises (a) a substrate region consisting largely of silicon and (b) a silicon oxide layer extending along the silicon substrate region at least at the bottom of the opening;

the method includes, prior to the forming acts, removing material of the silicon oxide layer at the bottom of the opening to substantially expose the silicon substrate region at the bottom of the opening; and

at least part of the cobalt layer is formed along the silicon substrate region at the bottom of the opening.

60. (New) The method of Claim 58 wherein:

the first section comprises (a) a substrate region consisting largely of silicon and (b) a silicon oxide layer extending along the silicon substrate region at least at the bottom of the opening; and

the reacting act includes causing oxygen of the silicon oxide layer at the bottom of the opening to be dissolved by titanium of the titanium layer.

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